Factsheet January 10, 2017

Photo circuits Corporation (Class 2 Inactive Hazardous Waste Disposal Site)
31 and 43 Sea Cliff Avenue, Glen Cove, NY
Glen Cove, Nassau County
EPA ID#NYD0969920483
Georges Momberger Tel: (518)402-0449

SITE LOCATION AND DESCRIPTION: Photocircuits Corporation is located at 31 Sea Cliff Avenue, and 45 Sea Cliff Avenue, Glen Cove, NY. The Site consists of two Operable Units: **Operable Unit 1 (OU-1) and Operable Unit 2 (OU-2)**.

- **OU-1**, which is approximately 5 acres, is located at 31 Sea Cliff Avenue, Glen Cove, NY, in an urban/industrial area of Nassau County.

- **OU-2**, which is approximately 10 acres, is located at 45 Sea Cliff Avenue, Glen Cove, NY, in an urban/industrial area of Nassau County.

Site Perimeter: The Site occupies approximately a total of 15 acres. The site is bounded by **Sea Cliff Avenue to the north**; **The Pass and Seymour to the west**; **The Glen Head Country Club to the south**; and The **Glen Cove arterial highway to the east**.

Current Zoning/Used: The site is zoned Commercial/Industrial. All of the on-site buildings are vacant and in disrepair.

Surface Water Location: The Glen Cove Creek (Operable Unit 1) is located approximately 200 ft cross-gradient from the contaminated area on the site, and flows along the western edge of the Photocircuits property.

- ****Note**: This aquifer is a sole source aquifer, providing virtually all the groundwater used for private, public and industrial groundwater in the area.

GROUNDWATER FLOW DIRECTION: Groundwater flow is generally to the north northwest. Groundwater is present at 4 to 10 ft **below ground surface (bgs)**.

- **This aquifer is a sole source aquifer, providing virtually all the groundwater used for private, public and industrial groundwater in the area.**

MANUFACTURING OPERATION: Kollmorgen and Photocircuits manufactured:

- **printed circuit boards used in computers;**
- **automobiles, phones, televisions and in a variety of other items..**

Ownership History: The Company was founded since 1951.

- The property was formerly owned by **Powers Chemco (1954-1971) &**
- **Kollmorgen Corporation (1971-1986).**
- **Photocircuits Corporation** has occupied the site from 1986 to present. **The Company went out of business in early 2007**.

Waste Management Units/ Area of Concern (AOCs): There are two Areas of Concern:

- A **Tank Farm and**
- **A Drum Storage Areas.**

Hazardous Waste Contaminants of Concern: VOCs (1,1,1 –Trichloroethane,

- 1, 1-Dichloroethane, Vinyl Chloride, 1, 1-Dichloroethene, cis-1,2-Dichlor,
- Chloroethane,, Tetrachloroethene, Trichloroethene, Toluene, Benzene, methylene chloride, 1,1,1-TCA).

CORRECTIVE ACTION ACTIVITIES

Media Investigated: Groundwater, Surface Water, Soil, Subsurface Soil

Groundwater Investigation:

1992 Focus Remedial Investigation (FRI): A number of investigations were conducted through a **FRI in 1992** for the Sea Cliff Industrial Area, and OU-1

- **Sea Cliff Industrial Area**: Past Investigations of the Sea Cliff Industrial Area have documented chlorinated organic compounds exceeding standards in the groundwater underlying the site.

- **OU-1:** Past investigations of OU-1 have documented high concentrations of chlorinated organics compound in the groundwater underlying the site.

- **OU- 2**: Based upon investigations conducted to date, the primary contaminants of concern for OU2 are VOCs including tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-Trichloroethane (TCA), 1,1-Dichloroethane (DCA), 1,2-Dichloroethylene (DCE) and Vinyl Chloride (VC).

1994 Preliminary Site Assessment (PSA) for Soil and Ground Water: A PSA was condected in March 1994 had documented the presence of VOCs (1,1,1–Trichloroethane) (1,1,1-TCA) in the soil and groundwater associated with these premises, and identified Photocircuits as a source of methylene chloride and 1,1,1-TCA.

Sources of Contaminations to Soil & Aquifer (Drum Storage and Tank Farm Area)

- The highest concentrations are found in a **Drum Storage and Tank Farm Area** near the northeast corner of the property. Apparently, **leaking Drums and/or Tanks have contaminated the soils and the aquifer in this area.**

- The concentration in the aquifer is also well above the applicable Part 703 Groundwater Standard, and is thereby presenting a significant threat to the environment.

Class 2 Inactive Hazardous Waste Disposal Classification of Site in February 1995

The decision to list the site in the Registry was made, in part, on the basis of the March 1994 Preliminary Site Assessment for the Sea Cliff Industrial Area, which reported VOCs in groundwater was above standards at site.

****Note**: **A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.**

Soil Investigation

Finding: On-site soils have been contaminated with VOCs, and this contamination has spread to the underlying sole-source aquifer. Exceedances of standards, criteria, and guidance indicate that that PCE,TCA and several breakdown products including those listed above exceed standards in groundwater.

Subsurface Soil Investigation:

1996 Preliminary Site Assessment (PSI) and Report: A PSI was conducted on-site during August of 1996. and the Results of the Preliminary Site Investigation report, dated November 1996.

- **These reports identified the Drum Storage and Tank Farm areas located to the east of the Photocircuits' main building as the primary areas of concern at the site.**

- **Finding**: Concentrations of individual VOC contaminants in soils did not exceed Department soil cleanup objectives. No site-related subsurface soil contamination of concern was identified during the FRI/FFS. Therefore, no remedial alternatives need to be evaluated for subsurface soil.

Surface Water Investigation:

- **Finding:** Samples from the creek receiving drainage from the site did not contain elevated levels of contaminants.

Groundwater Investigation near the Tank Farm & Drum Storage Area

- **Contaminated Wells**: During the August 1996 PSI, **VOCs were detected in four of the eleven monitoring wells on the Photo circuits site**. The groundwater sample from **t**he vicinity of the **Tank Farm and the Drum Storage area** indicated the presence of the following compounds in excess of groundwater standards: vinyl chloride, chloroethane, 1, 1-dichloroethene, methylene chloride, 1, 1-dichloroethane, 1,2-dichloroethane, 2-butanone, 1, 1, I-trichloroethane, TCE, toluene, and PCE.

CONSENT ORDER (CO) ENFORCEMENT STATUS DATED MARCH 31, 1997

- The Department and the Photo circuits Corporation entered into a **Consent Order(CO)** on March 31, 1997. The Order obligates the responsible party to implement a Focused Remedial Investigation/Focused Feasibility Study (FRl/FFS) remedial program.

Remedial Investigation/Focused Feasibility Study (FRl/FFS) remedial program 1998 and 1999:

- **Two** Remedial Investigation/Focused Feasibility Studies (Rl/FFS) **were submitted as a result of the 3/31/97 CO. One in 1998** and the other **in the Spring of 1999.**

ENGINEERING CONTROL

- **A Soil Vapor Extraction (SVE) was installed in May 9, 2000 as part of an Interim Measures (IRM) in the Drum Storage Area & Tank Farm**

- **Bioremediation Pilot Study in 1998**: The increase in observed contaminant levels between the 1998 and 2000 events is likely due to the installation of additional sampling points (as part of the Bioremediation pilot study) which were placed closer to the original contaminant sources than the sampling points used in 1998.

1) **Catalytic Oxidizer/Scrubber in May 2000**: A catalytic oxidizer/scrubber was added to the system, and the system was restarted in July of 2000. Removal rates gradually declined, and the system was decommissioned in November 2002. Significant mass removal of VOC contaminants was accomplished, however, levels of VOC contamination in groundwater in the treatment area remained high.

2) **Accelerated Anaerobic Bioremediation Pilot Test in August of 2000**: An Accelerated Anaerobic Bioremediation pilot test was begun on the site in the Drum Storage/Tank Farm area. Substrate (emulsified soybean oil) was injected in seven locations to a depth of 50 ft bgs.

3) **Groundwater monitoring beginning in August 2000;** carried out in the Drum Storage/Tank Farm as part of the SVE IRM and the bioremediation pilot study showed elevated levels of VOC contamination in groundwater with the highest level (282,800 ppb of total VOCs) being reached in September 2000 in **Monitoring Well SMP-3**. The dominant contaminants in the drum storage/tank farm area during this time period were 1, 1, I-trichloroethane and 1, 1- dichloroethane.

4) **Emulsified Soybeans Oil Injection in February 2002**: Emulsified soybeans were injected In February 2002, an additional 12 points were injected. In total, approximately 9,000 gallons of emulsified soybean oil were injected. Based on monitoring before and after the pilot test, the PRP's consultants calculated a first order degradation halflife of 578 days for VOCs within the pilot test area. First order degradation is the removal of one chlorine atom from a chlorinated VOC.

5) **Hydraulic Restrain System in January of 2002**: A hydraulic restraint system operating between the Photocircuits' main building and Sea Cliff Avenue was pilot tested.

    a. Four groundwater extraction wells were installed at depths up to 60 ft bgs. Groundwater extraction was carried out at a rate of 3 gallons per minute per well during the pilot test.

    b. **The system began full time operation in January 2003. The results of the pilot test were consistent with effective hydraulic restraint**.

FINDING: The operation of the hydraulic restraint system has not resulted in significant decrease in downgradient (north of Sea Cliff Avenue) contaminant concentrations, particularly in groundwater samples taken from 60-100 ft below ground surface (bgs).

- It is likely that the hydraulic restraint system does not have a sufficient effective depth to prevent contaminated groundwater from migrating beneath the system.

TWO RECORD OF DECISIONS (ROD)

- One ROD was submitted for **Operable Unit No. 1 in March 2008, to investigate and remedy the on-site soil and groundwater to a depth of approximately 100 ft** below ground surface **(bgs;** and

- The other ROD was submitted for **Operable Unit No. 2 on March 27, 2013 to investigate and remedy the** addresses **deep groundwater on-site and downgradient for the Photocircuits Corporation site and for the Pall site**.

SUMMARY OF ENVIRONMENTAL ASSESSMENT

The following environmental exposure pathways and ecological risks have been identified:

• The Glen Cove Creek runs along the western edge of the Photocircuits property. The creek is located approximately 200 ft cross-gradient from the contaminated area on the site.

Sampling results from shallow groundwater monitoring wells located adjacent to the stream **(MW-4 and MW-9**) indicate total VOC levels of 38 ppb or less. Therefore, it is unlikely that recharge of the stream from on-site groundwater would result in significant VOC contamination in the stream.

Samples from the creek receiving drainage from the site did not contain elevated levels of contaminants, therefore, a viable exposure pathway to fish and wildlife receptors is not present.

• Site-related contamination has entered the Upper Glacial Aquifer. This aquifer is a sole source aquifer, providing virtually all the groundwater used for private, public and industrial groundwater in the area. The contaminated groundwater at the site presents a potential route of exposure to the environment. There are no known exposure pathways of concern between the contaminated groundwater and the environment. The potential for plants or animal species being exposed to site-related contaminants is highly unlikely.

SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYC RR Part 3 7 5. At a minimum, **the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.**

The remediation goals for this site are to eliminate or reduce to the extent practicable:

• the release of contaminants from soil into groundwater that may exceed groundwater quality standards;

• soil vapor intrusion into residential and/or commercial facilities both onsite and off site;

• ingestion of groundwater impacted by the site that does not attain New York State drinking water standards as outlined in 10 NYCRR Part 5, Subpart 5-1; and

• off-site migration of groundwater that does not attain Department Class GA Ambient Water Quality Standards.

Further, the remediation goals for the site include attaining to the extent practicable:
• ambient groundwater quality standards

OPORABLE UNITS No.1

1**)"Source Area Investigation**, Sea Cliff Industrial Area, Glen Cove, NY," September 1992.

2**)"Results of Preliminary Site Investigation, 31 and 45 Sea Cliff Avenue Properties**," November 1996.

3**) Order on Consent, Index No. Wl-0713-94-12, between NYSDEC and Photocircuits Corporation,** executed on March 31, 1997.

3**)"Remedial Investigation/Interim Remedial Measure Work Plan**, Photocircuits Corporation, Glen Cove, New York," March 1997.

4**)"Remedial Investigation Report, 31 and 45 Sea Cliff A venue Sites,** Photocircuits Corporation, Glen Cove, NY," September 1998.

5)"**Work Plan 2000 for Remedial Investigation (Rl) Completion, Interim Remedial Measure (IRM) Implementation and Feasibility Study (FS)**," March 2000.

6) **Quarterly Progress Reports**, Photocircuits Corporation, 2000 to 2004.

7**)"Remedial Design, Groundwater Hydraulic Control System**," April 2002.

8) **"Focused Feasibility Study**, Photocircuits Corporation, 31 Sea Cliff Avenue, Glen Cove, New York," October 2006.

9)"**Pall, In-Situ Chemical Oxidation Phase II Pilot Test and Source Evaluation Report**," September 2007.

10) **Proposed Remedial Action Plan** for the Photocircuits Corporation site, Operable Unit No. 1, dated September 2007. prepared by the NYSDEC.

RECORD OF DECISION OF MARCH 27, 2013 for OPERABLE UNIT 2

Operable Unit No. 2 addresses deep groundwater on-site and downgradient for the Photocircuits Corporation site and for the Pall site. The remedial investigation for Operable Unit No. 2 is underway.

SUMMARY OF REMEDIAL INVESTIGATION

REMEDIAL INVESTIGATION WORKPLAN: A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

• Research of historical information

Geophysical survey to determine the lateral extent of wastes,

• Test pits, soil borings, and monitoring well installations,

• Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
• Sampling of surface water and sediment,

• Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:
- groundwater
- soil

REMEDIAL DESIGN PROGRAM

1) A **REMEDIAL DESIGN PROGRAM** will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

Note: **IN-SITU CHEMICAL OXIDATION will be used with **GROUNDWATER EXTRACTION** downgradient of the treatment area and Re-injection upgradient of the treatment area.

Note: In-situ chemical oxidation is a technology used to treat volatile organic compounds in the soil and groundwater. The process injects a chemical oxidant into the subsurface via injection wells or an infiltration gallery. The method of injection and depth of injection is determined by location of the contamination. As the chemical oxidant comes into contact with the contaminant, an oxidation reaction occurs that breaks down the contaminant into relatively benign compounds such as carbon dioxide and water. Several chemical oxidants are commercially available.

Sodium Permanganate will be the chemical oxidant evaluated. At this site, the chemical oxidant will be applied through injection wells screened from 60 ft bgs to about 130 ft bgs to target the contaminants of concern. Contaminants at shallower depths at both the Pall and Photocircuits sites are being addressed through the Operable Unit 01 remedies for each site.

Prior to the implementation of these technologies, laboratory and pilot scale studies would be conducted to more clearly define design parameters.

INSTITUTIONAL CONTROL:

- Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);

- allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;

- prohibits agriculture or vegetable gardens on the controlled property; and

- requires compliance with the Department-approved Site Management Plan.

(CA750) A positive Release to Ground Water Under Control is projected for Q4FY18

(CA725) A positive Human Exposure Under Control 8/17/15

(CA550) A Remedy Construction Completed is projected for Q1FY18 (11/24/17)